



The leader in clean electric transportation.

Prepared for:
California Public Utilities Commission



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The leader in clean electric transportation

- **Largest Deployment of EVs + Infrastructure**
 - 4,700 Nissan EVs • 11,210 charge stations • 5 states/markets
 - \$107.8 M in US Dept. of Energy & California Energy Commission funding
- **Leading EV Infrastructure Experience**
 - Involved in every major N. American EV initiative since 1990's
 - 5,600+ Charging Stations Installed
- **Premier Battery Fast-Charge Systems**
 - 50+ US & International patents since 1990
 - Fortune 500 customer base
- **Advanced Transportation R & D, Engineering & Testing**
 - Primary Contractor to U.S. Dept. of Energy in EV sector
 - 10+ million miles of testing on 200+ advanced fuel vehicle



Largest deployment of EVs & charge infrastructure
Involved in every major N. American EV initiative since 1989
Power Electronics, R & D, Engineering, Electric Drive Systems
Contracted for DOE's Advanced Vehicle Testing Activity
Industry leading Minit-Charger line of fast-charge systems

Other Activities:

- EV Infrastructure (Levels 2 +3)
- Battery Performance testing
- Battery cycling & development
- Consulting/Engineering Services

- H₂ Infrastructure
- H₂ ICE Vehicles
- Alternate fuel infrastructure
 - Electric, CNG, H₂ & H₂ blends

**eTec powered vehicle
running on hydrogen**



Charges faster & safer vs. any other systems

50+ US & International patents

Meaningful charge for an EV in ~15 mins

Originally designed for on-road EV use

Used in airport, industrial & on-road applications

Proven Benefits:

- Reduces annual fueling costs by 70-80%
- 50-65% smaller & 50-70% lighter
- Increases worker productivity & safety

Current Markets

Airport GSE

Material Handling

NEVs

Emerging Markets

EVs + PHEVs

Public Charging

Commercial Charging



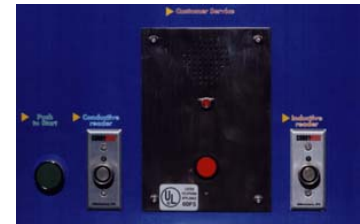
Complete “Turn-key” Infrastructure Services

- Over 400 EV chargers installed
 - Residential / Commercial / Public
- Recently awarded \$99.8 million DOE Award to install and analyze EV infrastructure in five market launch areas



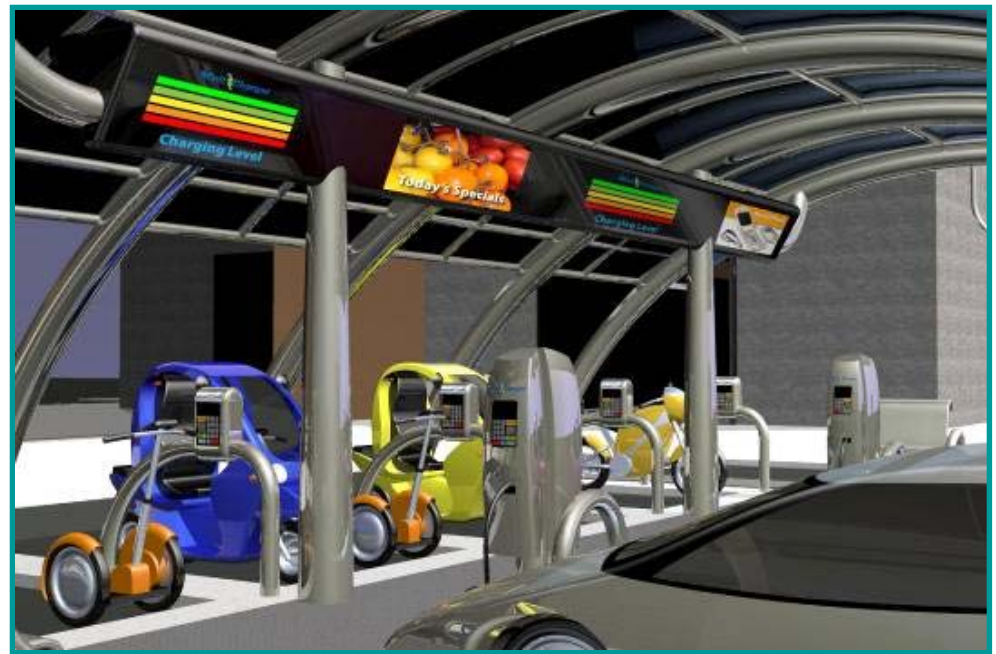
eTec Public Stations

- Grant procurement
- Coordination with local utilities and government agencies
- EV Station Features
 - Access / Data Monitoring Systems
 - Security Lighting
 - 24 Hour Customer Service Line
 - Integrated Power Section and Separate Metering
 - Instructional / Advertising Panels
 - Bumper Guard / ADA Compliant



EV/PHEV, Material Handling, Airport GSE

- Developing next generation Level 2 & 3 PHEV/EV Supply Equipment
 - J1772 compatible
- Expected availability in Q2 2010



Conceptual Fast Charge Stations



A holistic approach to EV infrastructure

- **EV Micro-Climate Program**

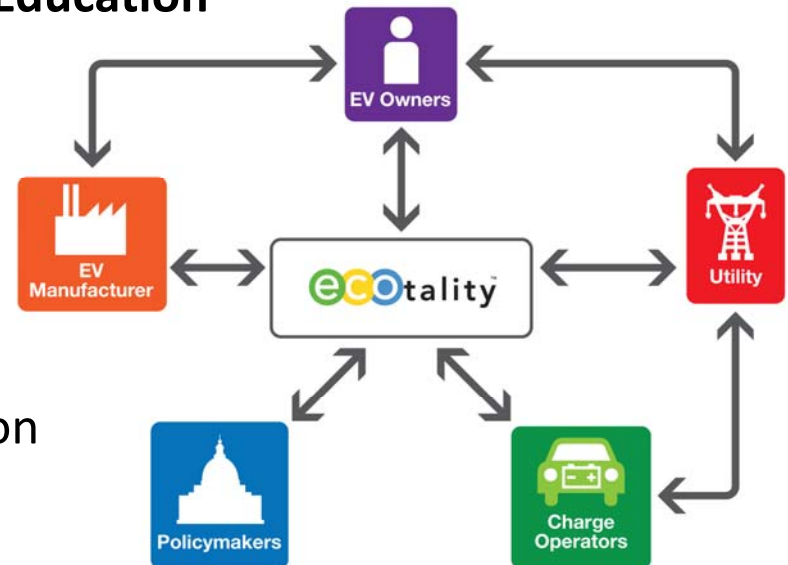
- Ensures areas are “plug-in ready”
- Establishes alliances w/ key stakeholders
- Provides detailed Roadmap/Action plan
- Implements universal public charge infrastructure
- Establish Micro-Climates & connect w/ Fast-Charging



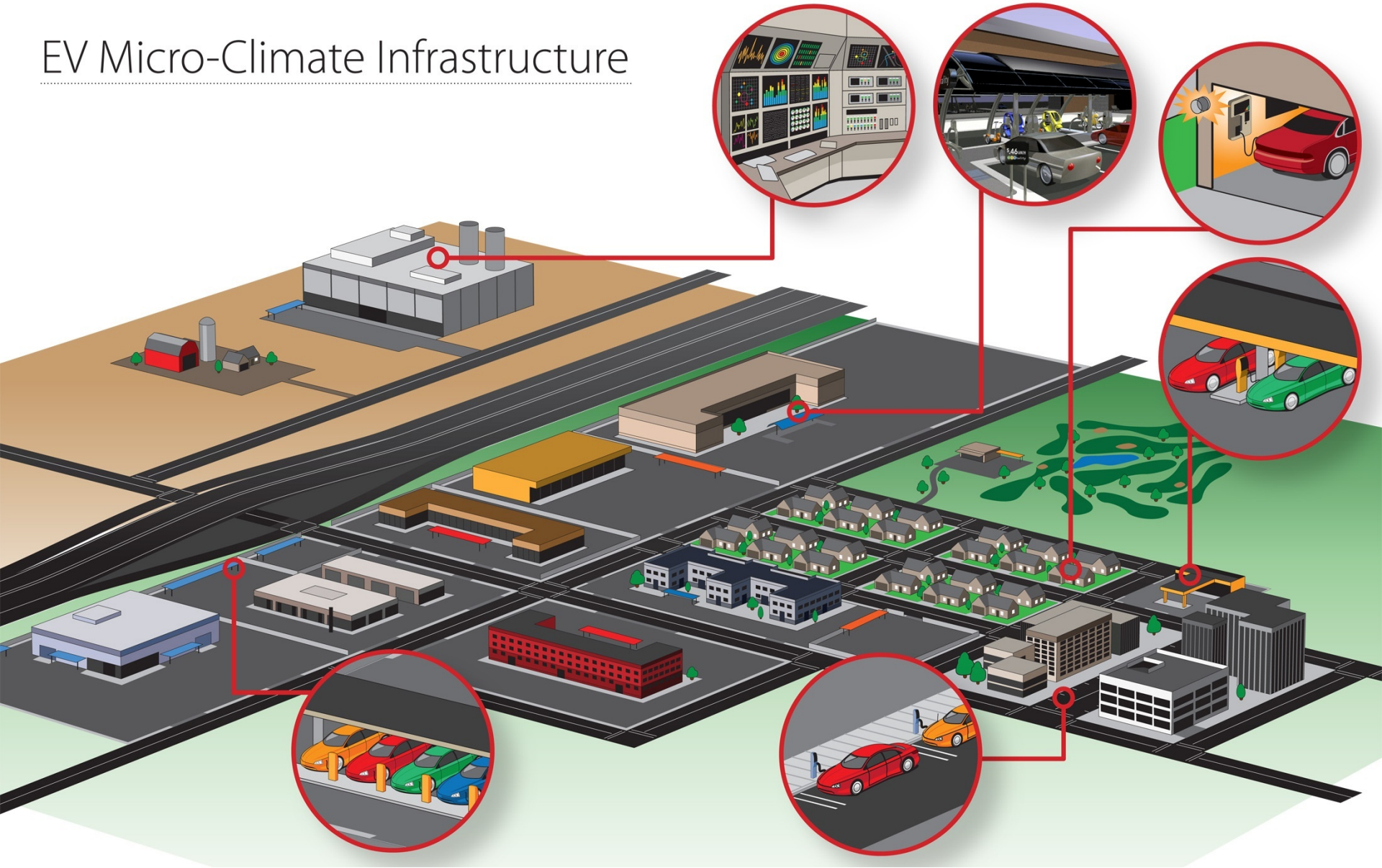
- **Active Government Relations & Public Education**

- **Soft Infrastructure Development**

- First responder training
- Code inspection officials coordination
- Roadside assistance development
- Instal contractor training & certification
- Dealer training
- Public awareness



EV Micro-Climate Infrastructure



The largest deployment of EVs & Charge Infrastructure

Deployment: 5 states / 11 markets:

- **Arizona**
 - Phoenix/Tucson
- **California**
 - San Diego Region
- **Oregon**
 - Portland, Eugene, Salem, Corvallis
- **Tennessee**
 - Nashville, Knoxville, Chattanooga
- **Washington**
 - Seattle

Funding Overview:

- **\$207.6 M total project value**
 - *\$99.8 M in US DOE funding*
 - *\$8 M in CEC funding*
 - *Partners provide matching costs*

Project Overview

- ECotality's eTec is Project Manager
- 4,700 Nissan LEAF EVs
- 11,210 charge stations deployed
 - *4,700 residential (L2)*
 - *6,250 public/commercial (L2)*
 - *260 Fast-Charge (L3)*

Project Schedule

- | | |
|--------------------------|---------|
| • Contract | 10/1/09 |
| • Initial Infrastructure | Q3 2010 |
| • Vehicle Launch | Q4 2010 |
| • Final Infrastructure | Q2 2011 |
| • Evaluation Ends | Q3 2012 |
| • Completion | Q2 2013 |

40+ project participants 10

- ~ 900 - 1,000 Nissan LEAFs in each market area
 - Program sign up at Nissan Dealer
 - Participant qualification required
 - Vehicle data collection
- ~ 900 - 1,000 Level 2 residential EVSE in each area
 - “Smart” chargers for user functionality
 - Revenue grade demand & energy metering
 - Internet based data collection - wired interface
 - Internet based user interface
- Project Partners:

GRIDPOINT®



- ~ 1,250 Level 2 EVSE in each market area
 - Revenue grade demand & energy metering
 - Revenue system pilot(s)
 - Internet based data collection - cellular interface
- Initial installations tied to retail locations
- Employer locations tied to vehicle sales
- Project Partners:

CBRE
CB RICHARD ELLIS


Bovis
Lend Lease



- ~ 200 Level 2 EVSE in each market area
- Locations coordinated w/ local government
- Revenue system pilot(s)
- Project Partners
 - City & County governments
 - Electric Utilities
 - Coulomb Technologies



Coulomb
Technologies

Fueling the Electric Transportation Industry

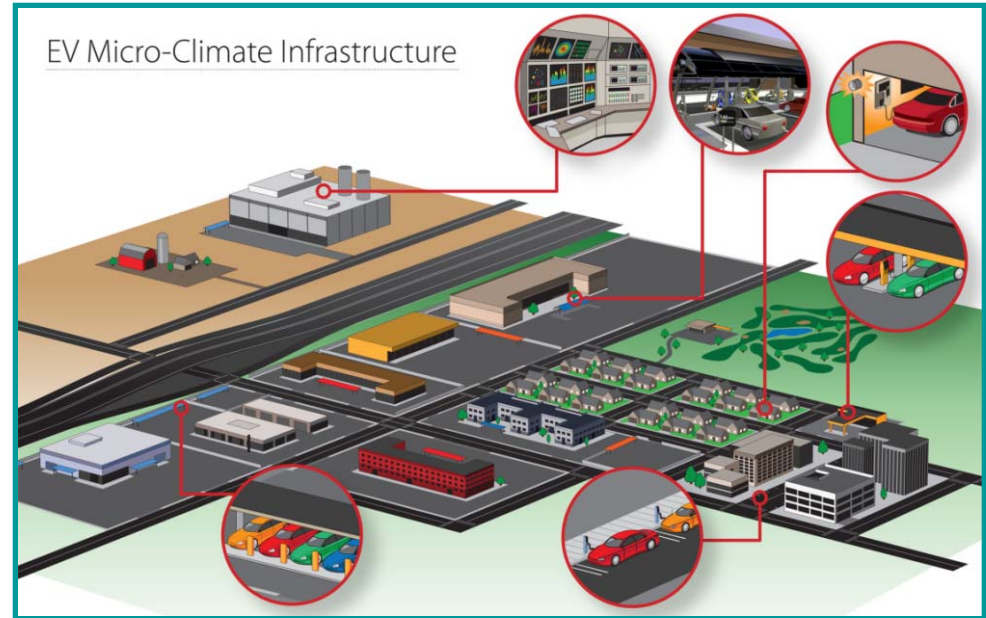


Fast-Charge Infrastructure

- 260 total Level 3 Chargers
- ~ 50 Level 3 chargers in each market area
- Telematics interface provides status
 - Price
 - Availability
- Project Partners:



- Vehicle and Charger utilization
- Smart Grid Integration
 - Utility Impacts
 - Demand reduction pilots
- Lessons Learned
- Project Partners



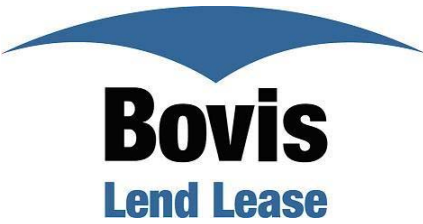
GRIDPOINT

UCDAVIS

Over 40 Project Partners



NISSAN



CBRE
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GRIDPOINT

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Websites

www.ECOTality.com

www.etecEVs.com

www.minit-charger.com

APPENDIX SLIDES

Material Handling Products



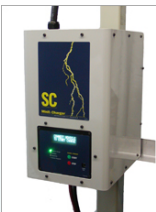
- **Model 355/448**
 - 400Amp Output
 - Parallel or Sequential Priority Charging

- Launched in 2002
 - Only system to provide Sequential Priority Charging which reduced utility infrastructure and demand costs



- **Model “PJ”**
 - Dual 110Amp Output, High Frequency design
 - Designed for electric Pallet Jacks

- Launched in 2005
 - First high-frequency fast charger specifically designed for pallet jacks
 - Lightweight and efficient design



- **Model “SC”**
 - Single Output, High Frequency design
 - 250Amps DC Output
 - Medium to heavy duty applications

- Launched in August 2008
 - High frequency, multi-shift and retail store applications
 - Low cost battery identifier
 - Lightweight and easy to install and operate



- **Model “FCx”**
 - Single Output, High Frequency design
 - 320Amps DC Output
 - Medium to heavy duty applications

- Est. Launch in Spring 2009
 - High frequency, multi-shift charger for medium to heavy duty applications
 - Ideal for Automated Guided Vehicle applications (AGV)

Airport Ground Support Equipment



- **Model GSE-200SP/DP**
 - 15kW Single and Dual Output Available
 - Outdoor Rated
 - Multi-voltage, Multi-chemistry
 - Launched in 2003
- **Model GSE-250SP/DP-hf**
 - 15kW Single or Dual Output
 - High Frequency Design
 - Lighter/less expensive design
 - Exp. Launch fall 2008
- **Model GSE-300DP**
 - 30kW Dual Output (15kW per side)
 - High Frequency Design
 - Designed for heavy-duty applications
 - Exp. Launch fall 2008